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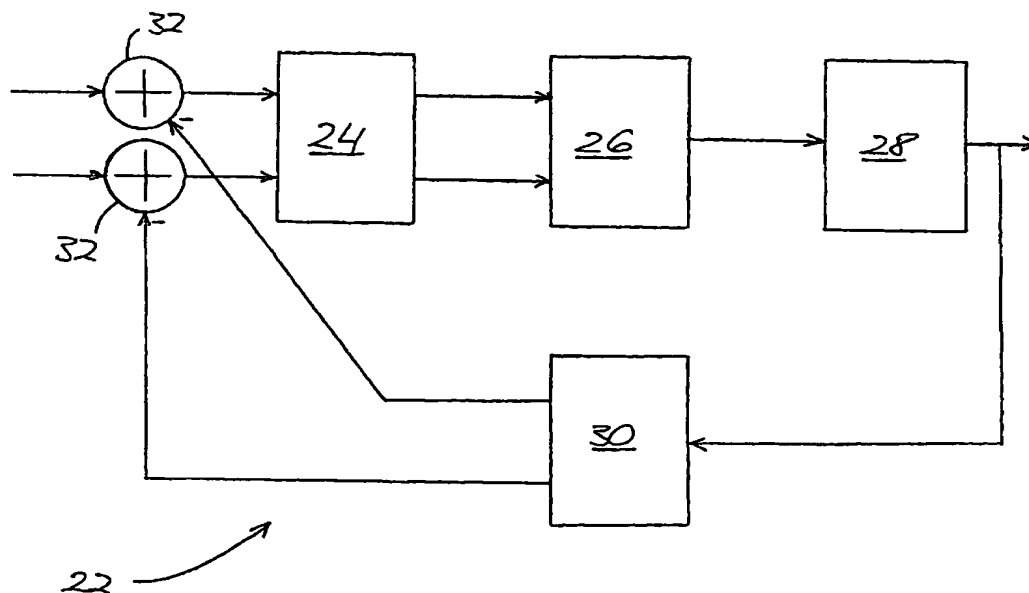
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- (71) Applicant (for all designated States except US): **MI-CROSYSTEMS ON SILICON (PTY) LTD. [ZA/ZA];** Glen Gables (Retail & Office Park), Cnr. Louis Botha & Lynnwood Rd., 0040 Lynnwood Ridge (ZA).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **SUNTKEN, Artur, Wilhelm [DE/ZA];** P.O. Box 70102, 0041 The Willows (ZA).
- (74) Agents: **HILLERINGMANN, Jochen et al.;** Bahnhofsvorplatz 1 (Deichmannhaus am Dom), 50667 Cologne (DE).
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[Continued on next page]

(54) Title: **SENSING DEVICE FOR SENSING A PHYSICAL PARAMETER**



(57) Abstract: The sensing device for sensing a physical parameter such as radiation, temperature or the like, comprises an analogue sensor element sensitive for the physical parameter to be sensed and outputting an analogue signal and an analogue two-digital converter (ADC) having an MOS input stage for receiving the analogue output signal of the sensor element so as to convert the analogue output signal to a digital output signal.



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- with international search report
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INTERNATIONAL SEARCH REPORT

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B. FIELDS SEARCHED

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IPC 7 G08B H03M H04N H05B H03L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 461 425 A (FOWLER BOYD ET AL) 24 October 1995 (1995-10-24)	1-5
Y	figure 2 column 1, lines 65-68 column 2, lines 1-3	6-11
Y	US 4 465 379 A (ASAKAWA TATSUSHI ET AL) 14 August 1984 (1984-08-14) figure 10 column 2, lines 65-68	6
Y	US 5 811 808 A (METSCHULEIT JEFFREY L ET AL) 22 September 1998 (1998-09-22) figure 1 column 1, lines 33-35	7,10,11
	-/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

Coffa, A

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International Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4 827 133 A (ZIERHUT HERMANN) 2 May 1989 (1989-05-02) figure 1a column 3, lines 7-9	8,9
A	----- KOGURE H ET AL: "ANALYSIS OF CMOS ADC NONLINEAR INPUT CAPACITANCE" IEICE TRANSACTIONS ON ELECTRONICS, INSTITUTE OF ELECTRONICS INFORMATION AND COMM. ENG. TOKYO, JP, vol. E85-C, no. 5, May 2002 (2002-05), pages 1182-1190, XP001127763 ISSN: 0916-8524 page 1182, column 1, paragraphs 1,2 page 1187, column 1, paragraph 3 figure 9a	1,2
A	----- "Burr-Brown Integrated Circuits Data Book, Data Conversion Products" 1994, BURR-BROWN, UNITED STATES, XP002303870 page 2.341, column 1, paragraph 1-3; figures 4,5 -----	3-5

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5461425	A	24-10-1995	WO 9522180 A1	17-08-1995
US 4465379	A	14-08-1984	JP 1445381 C	30-06-1988
			JP 55155219 A	03-12-1980
			JP 62052248 B	04-11-1987
			JP 56001321 A	09-01-1981
			JP 1453074 C	10-08-1988
			JP 56048706 A	02-05-1981
			JP 62061163 B	19-12-1987
			CH 654716 A	14-03-1986
			DE 3019831 A1	27-11-1980
			FR 2457606 A1	19-12-1980
			GB 2054997 A ,B	18-02-1981
			GB 2114835 A ,B	24-08-1983
			HK 88285 A	15-11-1985
US 5811808	A	22-09-1998	NONE	
US 4827133	A	02-05-1989	DE 3537316 C1	12-03-1987
			DE 3677456 D1	14-03-1991
			EP 0220511 A2	06-05-1987
			JP 5004623 B	20-01-1993
			JP 62100626 A	11-05-1987